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The dinosaur from 600 BCE! Interpreting the dragon of Babylon, from archaeological excavation into fringe science

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ABSTRACT

In 1918, German archaeologist Robert Koldewey, excavator of Babylon, Iraq, observed that the depiction of the fantastical "dragon of Babylon" on the sixth century BCE Ishtar Gate must reference a real animal whose closest relatives would be dinosaurs like the iguanodon. Though ignored within archaeology, Koldewey's comments were taken up in German-American popular science writer Willy Ley's "romantic zoology" (1941), then by Bernard Heuvelmans (1955), founding figure in the fringe field of cryptozoology. Their interpretations would ultimately inspire expeditions by the International Society of Cryptozoologists in Central Africa to find the Mokele-Mbembe, a "living dinosaur," and migrate into Young Earth Creationist and ancient aliens theories. An analysis of Koldewey's marginal academic observation serves as a means of considering the process of knowledge formation and canonization and the unpredictable life of scholarly ideas.

Introduction

In his 1918 vol *Das Ischtar-Tor*, Robert Koldewey, the brilliant, respected excavator of Babylon's Ishtar Gate in what is today central Iraq, hinted at something almost as extraordinary as the monumental ancient remains he had uncovered: that one of the fantastical creatures depicted on these remains, the so-called dragon of Babylon, the sirrush,[1] might derive from a Babylonian memory of a once-living creature, a creature very like a dinosaur. Koldewey detailed the concordances between the sirrush's anatomy and that of various known dinosaurs, finding the iguanodon the closest relative, but stopped just short of a committed conclusion. Was he really suggesting that ancient Babylon might provide evidence for dinosaurs, or their very close relatives, living alongside humans in historical time? As a sensational claim it might have surpassed even his colleague Friedrich Delitzsch's (1902, 1903, 1904) culture-shaking arguments about Babylonian priority for various biblical concepts.

But Koldewey did nothing to emphasize the significance of his observations, and they were passed over in silence within the field. Not so in another area that emerged as a self-described discipline in the 1940s: cryptozoology, the study of yet unknown (many would say nonexistent) creatures. There his observations were taken to a logical conclusion by influential German-American popular science writer and rocketry enthusiast Willy Ley, and subsequently by the French-Belgian biologist who gave cryptozoology its name and leant his academic credentials to the endeavor, Bernard Heuvelmans.

This article gives Koldewey's observations about the lifelike dinosaur appearance of the sirrush some of the attention which they did not receive in their own time. It places them in the context of a German culture in which they were scientifically marginal but accorded with widely held popular beliefs that overlooked prehistoric creatures might still survive in remote parts of the world. In Germany at this time, dinosaurs had a significant visual presence in popular media and urban spaces. The article then considers how these claims have made their way from Koldewey through Ley and Heuvelmans to become a mainstay of modern cryptozoology, for which Koldewey serves as a voice of authority and legitimation for fringe claims. His observations have justified expeditions in search of living dinosaurs, and more recently been marshalled in support of Young Earth and ancient aliens theories.

By tracing the unconventional lifespan of Koldewey's analysis of the

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[1] Koldewey refers to the creature as "the dragon of Babylon" or the "sirrusch" (in English spelling, conventionally rendered "sirrush"). At the time of his publications, as Koldewey does acknowledge, Friedrich Delitzsch had already identified this as a misreading of the cuneiform and argued for a reading as "*mušruššu*", "*prachtschlange*", "magnificent snake" (Koldewey, 1918, pp. 27–28); it is now read and conventionally called *mušhuššu* ("mušhuššu," Chicago Assyrian Dictionary, 1977). However, in this article, I use sirrush because this is Koldewey's own term and because it is the term conventionally used in subsequent cryptozoological scholarship: a frozen form, as it were, reflecting Koldewey's singular importance to that field.

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sirrush from flagship publications of what is usually considered the first scientific archaeological excavation in Mesopotamia into progressively more *outré* scholarly spaces, we can observe the processes whereby fringe disciplines canonize and reify certain scholarly ideas and observations, and consider how scholarly observations become "real" to certain receivers.

Koldewey on the dragon of Babylon

Robert Koldewey is today famous not only as the excavator of Babylon's remarkable sixth century BCE urban remains, but also as the originator of scientific archaeology for the Near East. His Babylon excavations employed a methodical, stratigraphic approach, which nonetheless did not preclude a constant inventiveness and experimentation in method (von Ess, 2008; Liverani, 2016, pp. 66–107; Marzahn, 2008a, 2008b; interrogating this perspective Micale & Nadali, 2008). Trained as an architect, Koldewey was an experienced excavator with strong knowledge of the local area, which became his home for the two decades he worked in Mesopotamia (in regions then under Ottoman control, today Iraq). He fought to prioritize the preservation and reconstruction of ancient architecture and monumental art over "treasure hunting" for cuneiform texts. His opponents in this regard were the leadership of his own funding organization, the Deutsche Orient Gesellschaft (DOG), whose agenda was set by textual scholars like Friedrich Delitzsch, professor in Berlin, head of the Near East section of the royal museums, and a personal favorite of Kaiser Wilhelm II, whose patronage established the DOG (Brusius, 2017; Crüsemann, 2000, pp. 109–164; Kohlmeyer & Strommenger, 1991, pp. 1–66). Although Koldewey fought successfully for his own interests, he was, as Frederick Bohrer (2003, p. 276) argues, aware of his uncertain position professionally. He did not have the authority of a professorship, and ceded the limelight for early interpretation of his finds to Delitzsch, whose controversial "Babel und Bibel" lectures, enlivened with photographs of the ongoing DOG Babylon excavations, put Babylon at the center of the Wilhelmine culture wars by suggesting that the roots of some of the most treasured biblical concepts, including monotheism, were found in Mesopotamia (Arnold & Weisberg, 2002; Delitzsch, 1902, 1903, 1904; Lehmann, 1994, 2018).

Koldewey had little interest in seeking biblical connections. He had begun his excavations at Babylon in 1899 with the explicit goal of finding monumental architectural remains of a city that was remembered in biblical and classical sources as one of the great urban wonders of the world. An exploratory trip had revealed fragments of glazed brick on the surface of the site which formed the justification for the choice of Babylon as a DOG venture, despite relatively unfruitful past excavation by the British and French (Chevalier, 2008; Taylor, 2008). Koldewey's expectations were rewarded as he soon uncovered the monumental walls of Babylon, including most famously the structures subsequently referred to as the Ishtar Gate and the Processional Way, dating to the reign of Nebuchadnezzar II in the sixth century BCE (Pedersén, 2021). Nebuchadnezzar II was a major figure in the Hebrew Bible, as destroyer of the Second Temple and instigator of the Babylonian Captivity. His building projects and accompanying cuneiform inscriptions were then not only interesting as spectacular archaeological and art historical finds in themselves, but as further confirmation and elaboration of biblical history (see Shavit & Eran, 2008, pp. 156–186). In unadorned mudbrick and in some places in coloured, glazed bricks, these structures incorporated mass-produced molded bricks that formed figural representations of animals, in repeating series: the lion, sacred to the goddess Ishtar, the wild bull, sacred to the storm god Adad, and a fantastic creature Koldewey referred to as "the dragon of Babylon", or the sirrush (now read *mušhuššu*), sacred to Babylon's patron deity, Marduk (Marzahn, 2008c).

When Koldewey excavated the gate, the sirrush, a composite creature attested from the late third millennium, was already known as a figure in the Mesopotamian visual repertoire (Black & Green, 1992, p. 166; Watanabe, 2015, pp. 219–222). The Babylon glazed brick sirrushes would become by far the most famous and oft-reproduced iterations, thanks to Koldewey's photographs (Fig. 1) and his fellow architect-turned-excavator Walter Andrae's watercolor paintings. Today the best-known version of the creature derives from Andrae's three-dimensional reconstructions of the monumental Ishtar Gate in an exhibit at the Pergamon Museum (Fig. 2 and Fig. 3), a creation of ancient fragments, modern infill, and Andrae's informed imaginings (Bilsel, 2012, pp. 160–188; Brusius, 2017; Córdoba, 2003, pp. 41–60).

Koldewey wrote two long descriptions of the sirrush, in *Das Wieder Erstehende Babylon* (1913) and *Das Ischtar-Tor in Babylon* (1918). In both texts, Koldewey outlines its fantastic appearance: slim scaly body; hind feet of a bird of prey and front feet of a big cat; a long curvy tail with a scorpion-like stinger; a snake-like tongue and head with a straight horn and dermal flaps—indicating the animal had a pair of each of these, with only one visible in profile;[2] spiraling locks of hair emerging from the dermal flaps, with more hair forming a mane along the neck. Koldewey finds these locks of hair the "most striking" (*auffallendste*) feature in 1913, but not in 1918 when he is, as we shall see, less interested in calling attention to the strangeness of the creature and more interested in its plausibility. Despite this improbable configuration of features, Koldewey argued that the sirrush is unlike any other composite creature of Near Eastern art because of the iconography's consistency over time and its relatively realistic conception, measured against, for example, human-headed bulls.

In 1913, Koldewey briefly noted the similarity to characteristic features of the "primeval dinosaurs" and praised the artistic genius evident in the lifelike conception of the creature, but left matters there, regretfully noting that, "if only the forelegs were not so pronouncedly of a feline character, such an animal could actually have existed" (Koldewey, 1913, p. 49).[3]

By 1918 however, he had thought more about dinosaurs and was no longer certain that the front feet disqualified the sirrush from real existence. The sirrush

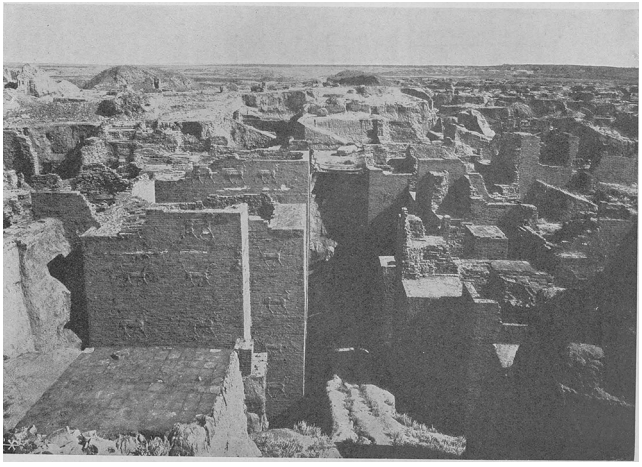

Fig 1. A view of the Ishtar Gate of Babylon, Iraq, from the north, with brick sirrushes and bulls visible *in situ*. Taken during Robert Koldewey's excavations some time before 1913 and published in *Das Wieder Erstehende Babylon* (Koldewey, 1913, p. 33; reproduced in Koldewey, 1914, p. 33). Credit: Robert Koldewey, Wikimedia Commons (PD US expired | CC0-1.0 license).

[2] Koldewey is right to read the single horn and flaps as only one side of a pair, as can be seen in three-dimensional artistic representations; see e.g. Maul (2008), p. 178, fig. 110.

[3] All translations from German are the author's own.

Fig 2. Glazed brick sirrush (mušhuššu). Reconstructed from fragments dating to the reign of Nebuchadnezzar, sixth century BCE, from Babylon, Iraq, now in Berlin, Vorderasiatisches Museum (VA Bab 04431). Credit: Vorderasiatisches Museum, Staatliche Museen zu Berlin, photographer Olaf M. Teßmer (CC BY-NC-SA 4.0 license).

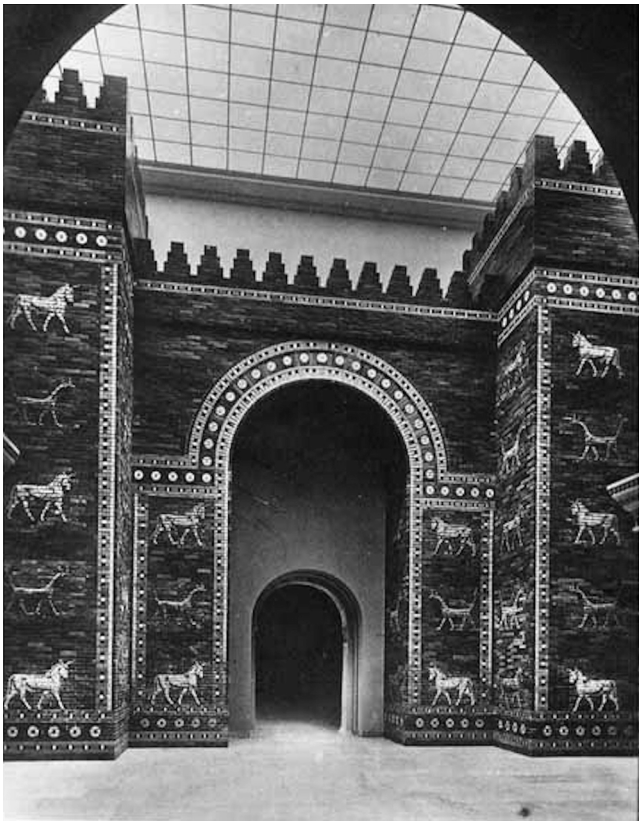

Fig 3. The reconstructed Ishtar Gate in the Pergamon Museum, photographed some time before 1945. A mixture of ancient fragments and modern infill, the reconstruction was designed and overseen by Walter Andrae and opened to public viewing in 1930 (Ischtar-Tor, Ident. Nr.: ZA 2.19./08679). Credit: Zentralarchiv, Staatliche Museen zu Berlin (CC BY-NC-SA license).

corresponds in its character to certain of the prehistoric dinosaurs to such an extent that one cannot deny this artificial entity its inherent viability. The scales do not preclude the simultaneous occurrence of hair. *Triceratops serratus* had two bony horns on the frontal bone and parietals that were elongated at the back and bent upwards. Our dragon has the small head, the long neck, the long tail, and particularly the pronounced differentiation of the fore and hind extremities in common with many dinosaurs (*Brontosaurus excelsus*, *Allosaurus fragilis*). We find the four-toed bird foot, with three toes forward and one backward, in *Anchisaurus dananus* and *Anchisaurus colurus*. *Iguanodon bernissartensis* clearly exhibits the bird claws of the hind feet with a quadrupedoid tarsal joint and the five-fingered front paws. If one found a configuration like that of our sirrush in nature, one would have to count it among the order of the dinosaurs, namely the suborder of the ornithopods. The iguanodon from the Belgian Chalk is the closest relative [*der nächste Verwandte*] of the dragon of Babylon (Koldewey, 1918, p. 29).[4]

Koldewey is now quite specific about the dinosaurs the sirrush resembles, locating anatomical precedents for the sirrush's features among an extremely diverse array of unrelated examples. The identification of known dinosaurs as likely close relatives suggests that this sirrush is modelled after a real creature yet unknown to us but likely alive in historical time in Mesopotamia with hereditary connections to known dinosaurs: "*nächste Verwandte*" is unambiguously a description of a family relationship.

Although the 1913 text is less definite than that of 1918 about the dinosaur connection, it includes several other elements that are powerful in their own way. First, Koldewey notes, almost as an aside, that the sirrush was undoubtedly the "dragon of Babylon" in the pseudo-canonical biblical text "Bel and the Dragon."[5] Koldewey speculates that by this time Babylonians must have been keeping some mundane reptile as a living sirrush in their temple. Second, Koldewey includes photographic close-ups of the sirrush's hindfeet above the feet of a real bird of prey (Fig. 4). This is not itself an argument for anything other than the ancient artist's skilled observation and creative use of natural models to imagine his fantastical creature. At a time when the genetic relationship between dinosaurs and birds was not yet recognized, Koldewey could not have intended this illustration to prove that the creature was related to a dinosaur (even if, unintentionally, it would serve to further those claims today). The illustration nonetheless has a striking rhetorical effect, moving the sirrush from the realm of fantasy to the realm of science with an image that would look at home in a zoological textbook.

The idea that Mesopotamian art might realistically represent animals now lost to human eyes is not absurd. The other two creatures represented on the gate are both examples: the wild bull is the aurochs (*Bos primigenius*), ancestor of today's domesticated cattle, which was likely extinct in Mesopotamia when the gate was constructed, and which went extinct as a species in sixteenth century CE Poland, while the Asiatic lion (*Panthera leo persica*) disappeared from Mesopotamia and other parts of the Middle East probably in the late nineteenth or early twentieth century CE. Now considered endangered, it survives only in a small area around the Gir Forest in India (Breitenmoser et al., 2008).

Koldewey's lack of elaboration about the significance of the sirrush-dinosaur relationship is easily overlooked among the larger impression created by Koldewey's two sirrush passages: the sirrush does not look like other implausible purely mythical creature (1913, 1918); there were real reptiles in ancient Babylon, as the Bible tells us (1913); the sirrush looks like a dinosaur (1913, 1918); moreover, it looks like identifiable and named dinosaurs whose extraordinary physiology is now a matter of scientific record (1918); including their highly differentiated front and hind feet (1913, 1918). The accumulation of evidence

[4] I leave out Koldewey's references, all of them to images of these creatures in the work of prominent German palaeontologist Ernst Freiherr Stromer von Reichenbach (1909–1912) (italics of scientific names added).

[5] This is the title usually applied to a discrete text, dating from some time in the latter part of the first millennium BCE, that is included as chapters 13 and 14 of the Book of Daniel in some Bibles. It is considered canonical in Catholic and Orthodox traditions, but not in Judaism or most Protestant denominations. It may be included separately with the apocrypha in Protestant Bibles.

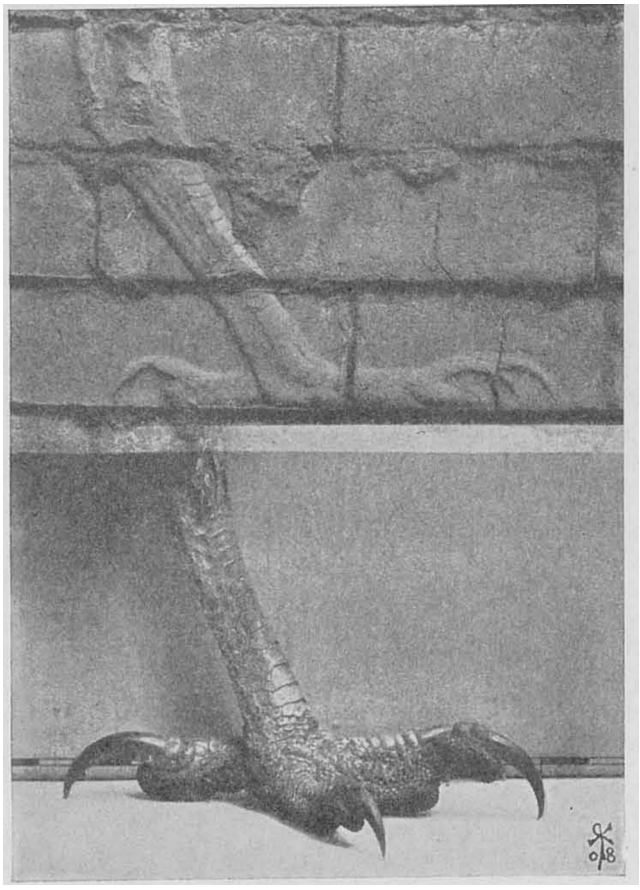

Fig 4. An illustration from Koldewey's *Das Wieder Erstehende Babylon* (Koldewey, 1913, p. 48; reproduced Koldewey, 1914, p. 48), showing a close-up of one of Koldewey's photographs of a brick sirrush's hind foot with that of a predatory bird. Credit: Robert Koldewey, Wikimedia Commons (PD US expired | CC0-1.0 license).

Koldewey marshals for a real scientific basis for the sirrush speaks much more loudly than his ultimate silence about what conclusion can definitively be drawn from all these observations. Further, his hesitance to identify the sirrush as a real creature had clearly diminished between 1913 and 1918, even if he was still a little coy about whether he truly believed it was real or when he believed it might have gone extinct.[6]

Living dinosaurs in Koldewey's time

Since the early nineteenth century, extinction was accepted in scientific circles as the main explanation for the disappearance of forms found in the fossil record, and scholarly chronologies developed by the middle of the century firmly placed the last known dinosaurs many millions of years before humans (Benton, 2003, pp. 18–95; Delair & Sarjeant, 1975; Moore, 2014a; Rudwick, 1995, pp. 29–30, 56–58). Although speculation about survival and descendants was always an aspect of serious paleontological discussion, contributing towards today's consensus that birds are extant dinosaurs, it was not scientifically sound, or in accordance with scientific consensus as it stood in 1918, to consider that a close relative of a dinosaur had been alive in Babylon in historical time.[7]

However, the status of dinosaurs as long extinct was not so settled among non-specialists. Dinosaurs came alive in fiction, notably in Arthur Conan Doyle's enormously popular *The Lost World* (1912), about dinosaurs surviving in an isolated Amazonian plain. Fictional depictions fed speculation about possible locations where real monsters might survive. One notable promoter of the idea was Carl Hagenbeck, a celebrity entrepreneur and exotic animal impresario, who opened the Hagenbeck Tierpark in Hamburg in 1907. Hagenbeck was a skilled self-promoter and showman whose zoo revolutionized captive animal display (Ames, 2008; Reichenbach, 1980). He was the first exhibitor to place animals in "panoramic" settings, displaying different creatures in one frame (cunningly separated by hidden canals) thus approximating real landscapes. Hagenbeck was a major celebrity in his time. He made the papers frequently and published several popular books. In 1909's *Von Tieren und Menschen* he wrote of reports from his own exotic-animal-seeking agents and from English hunters of monstrous creatures dwelling in Rhodesia and the African interior; he had become convinced, he explained, that this was some sort of dinosaur, likely a brontosaurus (Hagenbeck, 1909, p. 380). We will come back to Hagenbeck's claims, and how they got mixed up with Koldewey's analysis of the sirrush, later. These claims were enthusiastically reported in the European and American press but treated mostly with scorn in the African colonial press, which doubted both the possibility of a dinosaur and the claims that natives believed in one, since the legend seems to have been mostly invented by outsiders (Loxton and Prothero, 2013, pp. 271–73).

If we are to take a third-hand account as accurate, Kaiser Wilhelm II himself may have credited such tales. Peter Chalmers Mitchell, secretary of the Zoological Society of London, was quoted in an article in 1919 casting a skeptical eye on a tale circulating then about a Congo dinosaur, recalling a comment by the Kaiser during a pre-war visit to the London Zoo in which the Kaiser "described the existence of a similar pre-historic monster in German East Africa" (Loxton and Prothero, 2013, p. 275, quoting Anonymous, 1919). The Kaiser was an enthusiast for Near Eastern archaeology, personal patron of the DOG, and the most famous promoter of Delitzsch's "Babel und Bibel" lectures. It has been often noted that he seemingly rejoiced in an association between ancient Mesopotamia and German royal and imperial power, not only pouring state money into Mesopotamian excavations and museum displays, but also sponsoring the lavish 1908 historical pantomime *Sardanapal*, overseen by Delitzsch with sets by Koldewey's colleague Walter Andrae (Bilsel, 2012, pp. 175–76; Bohrer, 2003, pp. 297–304; Hartmann, 2020), and ultimately spending his final years in exile writing a book on Near Eastern divine kingship (Kaiser Wilhelm II, 1938). It is characteristic of him that he was open-minded enough to consider not only Delitzsch's arguments for a Babylonian background to the Bible, but also the possible survival of prehistoric creatures, and equally characteristic that this too was somehow tied into German imperial power, in this case German colonial presence in East Africa and the implied forthcoming mastery of its ancient creatures.

Yet one did not need to necessarily share the Kaiser's alleged belief in prehistoric survivals to have dinosaurs on the brain in early twentieth century Germany. In significant ways dinosaurs were visually present in the world, in a way that Babylon itself was at the same time and would continue to be in the Weimar period, not least as the reconstructed Ishtar Gate became a major Berlin landmark (Kohlmeyer and Strommenger, 1991, pp. 7–18; Micale, 2019; Polaschegg, 2011, 2015; Strzoda, 2008;

[6] As we shall see, his increased boldness was noticed and commented upon by later writers in fringe fields. Joseph P. Farrell (2011a), who will be discussed below, implies awareness on Koldewey's part of the danger of revealing hidden information that elites did not want the world to know.

[7] Earlier in the nineteenth century, these issues had not been so clear cut: for instance, Charles Lyell, the pioneering geologist whose *Principles of Geology* (1830–1833) revolutionized natural sciences, was fascinated by reports of sea serpents, which he believed supported his theory of a "steady state" universe without extinction in which "all classes of organisms existed and all times" (Lyons, 2009, pp. 25, see also pp. 34–50). This was a minority viewpoint but a real debate that needed to be had as the fossil record was built up.

Weichenhan and Polaschegg, 2017).

A burst of "dinomania" can be dated to one particular international celebrity: the *Diplodocus carnegii*. The discovery of this complete skeleton in Wyoming in 1899, in excavations sponsored by the enormously wealthy Scottish-American industrialist-philanthropist Andrew Carnegie, caused a sensation as it was prepared for display in the Pittsburgh Carnegie Museum (Brinkman, 2010; Rea, 2004; Rieppel, 2019). As part of his diplomatic strategy towards building international peace, Carnegie began to arrange the gift of diplodocus casts to European leaders (Nieuwland, 2010, pp. 61–68, 2019, pp. 89–131). After a cast was donated to the London Museum of Natural History in 1905, the Carnegie Museum began preparing one for the Kaiser, which arrived in 1908, a month ahead of one for the French president and several years before the casts for other crown heads of Italy, Russia, and Spain.[8] The German cast was displayed in the Berlin Natural History Museum.

It is impossible to overstate the sensational impact of the reconstructed diplodocus skeleton, the largest dinosaur skeleton then known, whether viewers visited in person or consumed images of the mounted bones and recreations of the living dinosaur which left them behind. Press coverage in many nations also indicates that the public easily understood the political significance of the *Diplodocus carnegii* as an agent of international diplomacy, and the irresistible and obvious comedy of the enormous creature as a symbol of the equally gigantic figures of American capitalism and the European ruling class feting the skeleton with gala dinners and lavish new museum buildings (G., 1912; Anonymous, 1908a, 1908b).

The reconstructed skeleton quickly led to speculative fleshed reconstructions in three dimensions. In 1909, Hagenbeck started planning a new Prehistoric Park (*Urzeitpark*) feature at his Hamburg zoo whose most magnificent resident would be a concrete diplodocus by the sculptor and animal painter Josef Pallenberg (Loxton and Prothero, 2013, pp. 270–71). The Kaiser, who was already enthusiastic about Hagenbeck's modern Hamburg zoo, viewed models of the reconstruction (Nieuwland, 2020, pp. 655–57).

The showman Hagenbeck was not the only one to decide that dinosaurs deserved a place, visually, among living creatures. The Berlin Zoological Gardens unveiled their own dinosaur images also in 1913 as part of their new, and very modern, aquarium building (Nieuwland, 2020, pp. 658–62). To decorate the exterior of the building, Heinrich Harder, a landscape painter and professor at the Prussian Academy of Arts, produced a series of vividly colored, lifelike images in ceramic tile and as mural paintings of prehistoric creatures. To rival the Hagenbeck diplodocus, he also created a fleshed reconstruction of an iguanodon, the creature Koldewey found most like a living sirrush, which stood out front (and still does today after a 1980s restoration to the war-damaged building). The detailed and lifelike sculpture shows the iguanodon's head turned, as if he has just caught an interesting scent or sound (Fig. 5).[9]

Harder was at this point already the preeminent "paleoartist" in Germany through his association with the popular science writer Wilhelm Bölsche, for whom he had illustrated several books on prehistoric creatures (Bölsche, 1908–1911, 1914) and with whom he produced several series of trading cards, starting in 1900, for the Hamburg cacao company Theodor Reichardt, then one of the largest producers of chocolate in the world. Harder's lifelike and dramatic images made use of his skills as a landscape painter to place dinosaurs in vivid and realistic spaces. Among the cards in this series is one of a group of iguanodons looking quite like his monumental statue, and a diplodocus reflecting German zoologist Gustav Tornier's arguments for a lizard-like crouched posture (Fig. 6), rather than the elephantine posture of the Carnegie mounting (Nieuwland, 2019, pp. 159–207). Trading cards like these were widely circulated among all sorts of people and helped to create an association between German colonial exploration and its benefits (the chocolate), and, in this series, the prehistoric past (Bräuer, 2016)—just as the Kaiser seems to have done in suggesting that living dinosaurs dwelled in German colonies.[10]

The dinosaurs that Koldewey mentions as close relatives of the sirrush would have been familiar to German readers at the time both from popular media and even as a physical presence in their cities—significantly, in contexts that explicitly suggested a direct association between prehistoric, extinct creatures and living exotic animals. It is suggestive that dinosaurs were considered a suitable subject for the Berlin aquarium's decorative program, and not even images of dinosaurs in an evolutionary chain leading up to present day creatures, but simply dinosaurs presented without any temporal distancing. It speaks to an accepted sense, needing no special justification, that prehistoric creatures and present-day exotic creatures were linked and equally available to encounter on a visit to the zoo.

It is also interesting to note that the Berlin Zoological Gardens simultaneously evoked archaeologically recovered early civilizations. The Ostrich House (1900), was modelled on a wide array of Old and New Kingdom Egyptian architecture and art, while the nearby Lowentör entrance (1909) evoked the New Kingdom Prudhoe Lions (Fitzenreiter, 2012; Loth, 2012). This kind of architecture was not uncommon in zoos of the nineteenth and early twentieth century, with Orientalist architectural styles alluding to the exotic geographical origins of the creatures within, but also associating exploration, conquest, and display of the exotic animal world with mastery of the ancient past via archaeology and architectural reconstruction. The deep past was made present in the Berlin Zoo in the form of recreated Egyptian sculpture and recreated dinosaurs alike, all of them existing in the same visual plane as living, extraordinary animals.

Koldewey spent the almost two decades of his Babylon excavations in Mesopotamia, with only three brief holidays away, returning to Berlin only after the British took Baghdad in March 1917 (Andrae, 1952, p. 11; Brusius, 2017, p. 273). The extent to which he himself was influenced by German "dinomania" was likely minimal. We can say, however, that he returned to a Germany populated in important ways by prehistoric creatures, perhaps contributing to his greater emphasis on specific dinosaur analogues in his 1918 account of the sirrush.

Into cryptozoology

Although Koldewey, as the excavator of the Ishtar Gate, might be considered a foremost expert on the creatures depicted on it, his observations about the dinosaur-like nature of the sirrush have been largely passed over within the field. Subsequent major works on art and iconography do not mention any resemblance between the sirrush (*mušhuššu*) and prehistoric creatures, nor treat the sirrush as any more plausible than other composite creatures. On the rare occasions Koldewey's observations are cited, authors add their own emphases, shifting the focus or tempering the sensational aspects of the dinosaur comparison. For instance, in 1931 Wilhelm Valentiner, director of the Detroit Institute of Arts, which had recently acquired a glazed brick sirrush (surplus from the Berlin Ishtar Gate reconstruction project), quoted Koldewey's 1918 dinosaur comparisons but firmly shut down fanciful speculation: "It is not to be assumed that the early Babylonian artists … knew such prehistoric animals, as many hundreds of thousands of years

[8] While the *Diplodocus carnegii* cast was in preparation for Berlin, an actual, though smaller, diplodocus skeleton was given by the American Museum of Natural History to the Frankfurt Senckenberg Museum, slightly taking the wind out of Carnegie's sails (Nieuwland, 2019, pp. 99–108).

[9] Nieuwland (2020) argues that the dinosaur scheme was in part a direct response to Hagenbeck and the threat that his new kind of zoo in Hamburg, and plans to open another zoo outside Berlin, posed to their institution.

[10] Images of Babylon were also featured in corporate trading cards, notably for Liebig Fleischextrakt, which included ancient Mesopotamian scenes in many of their "history of" series (writing, dining, men's costume, women's costume, etc) between the 1870s and the 1910s.

Fig 5. Drawing of Heinrich Harder's iguanodon statue from a booklet (H[einroth], 1913) marking the opening of the Aquarium of the Berlin Zoological Gardens. Credit: J. J. Weber, Leipzig; reproduced by the author (PD US expired).

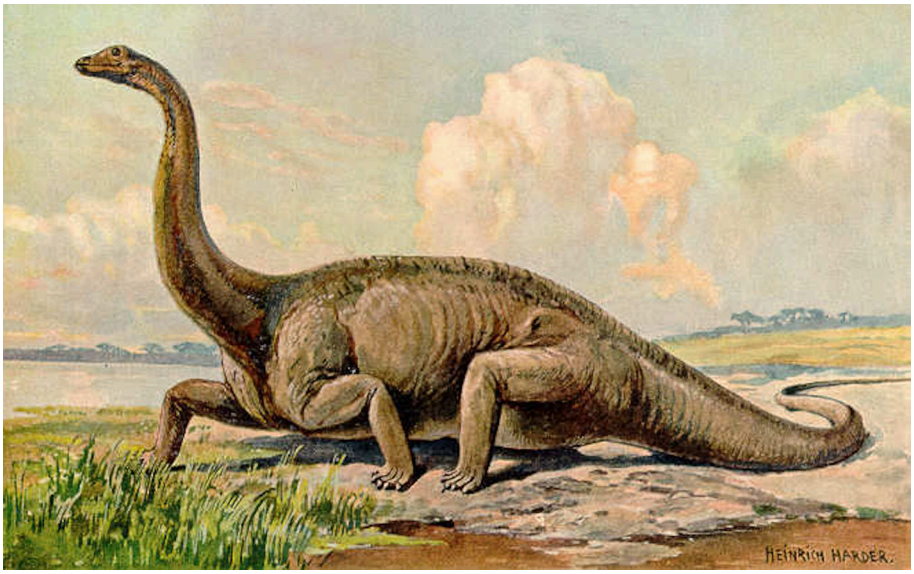

Fig 6. Heinrich Harder's "Diplodocus" in the trading card series *Tiere der Urwelt: Rekonstruktionen nach verschiedenen wissenschaftlichen Vorlagen*, ca. 1900, by Wilhelm Bölsche and Harder, produced for the Kakao-Compagnie Theodor Reichardt, Wandsbek-Hamburg. Credit: Heinrich Harder, Wikimedia Commons (PD US expired | CC0-1.0 license).

lay between their existence and the earliest beginnings of culture in Babylonia. One might, nevertheless, assume that parts of the skeletons of such a creature may have been found in the desert sands, which might have acted as a motive for the embodying and deifying of the Babylonian dragon" (Valentiner, 1931, p. 81).[11] He found it much more likely, however, that the Babylonian imagination was equal to its invention.[12]

The silence around Koldewey's scientific observations must be informed, I would argue, at least in part by embarrassment: they are unworthy of the field's first serious, scientific excavator. Happily for

[11] The idea that ancient cultures may have been influenced by fossil discoveries has been considered seriously by Mayor (2000), Romano & Avanzini (2019), and Fine & Fine (2021).

[12] More recently, Bilsel (2012, pp. 170–173) has discussed Koldewey's 1913 comments that the sirrush is uniquely lifelike and plausible as an expression of Koldewey's assessment of its successful "organic unity" by the terms of romantic aesthetics.

preservers of his reputation, Koldewey's caution facilitates polite disregard. Since he never explicitly comes to a conclusion about the significance of the sirrush's dinosaur similarities, he does not demand a response, and his inconclusive observations can be easily passed over without comment.

Those observations were given much more attention in a scientifically marginal field which coalesced in the 1940s: cryptozoology. The first person to take up Koldewey's suggestion from this perspective was Willy Ley, writing a little before the term *cryptozoology* had been coined, in *The Lungfish and the Unicorn: An Excursion into Romantic Zoology* (1941). A fascinating figure who eludes easy categorization, Ley was a popular science writer, best remembered in connection with the promotion of space exploration through best-selling books like *The Conquest of Space* (1949) and a ubiquitous media presence in postwar America as an expert on rocketry and space travel. Born in Berlin in 1906, he was fascinated by science and exploration from a young age and developed an interest in rockets as a teenager when he read engineer Hermann Oberth's *Die Rakete zu den Planetenräumen* (*Rocket to Interplanetary Space*) (1923). Inspired, he struck up a correspondence with the author and helped found the amateur rocketry and space travel club Verein für Raumschiffahrt, while writing popular books on the subject and taking courses in sciences at the University of Berlin. Ley and Oberth worked on the special effects and science publicity for Fritz Lang's blockbuster *Frau im Mond* (1929), whose speculative science was so realistic that, according to Lang, the Gestapo confiscated all models of the film's rockets and all foreign prints of the film they could find in 1937 (Buss, 2017, p. 50, citing Lang, 1969).

Ley left Germany soon after the National Socialists came to power and settled in the United States of America where he revived his career as a science popularizer with a regular science column (and occasional pseudonymous fiction) for science fiction magazine *Astounding Stories* and frequent contributions to mainstream and science fiction media. He would become close friends not only with science fiction great Robert Heinlein, but also with another émigré Berlin rocketry enthusiast, Wernher von Braun, as von Braun developed the Explorer 1 and Saturn V rockets that took the USA into space. Ley's skill as a popularizer and his media-friendly persona, as a quintessential German scientific expert, led to his appearance in a 1955 episode of the television series *Disneyland* about the US space program, alongside von Braun.[13]

Ley was equally passionate about his first childhood interest, "naturalism," and wrote several popular books in this area. He credited his love for the topic to growing up in the shadow of the Berlin Natural History Museum, home of the *Diplodocus carnegii* cast. One of Ley's favorite authors, as a child and into his adulthood, was Wilhelm Bölsche, the paleontology writer whose books were lavishly illustrated by Heinrich Harder (Buss, 2017, pp. 22–23). Ley would surely also have seen Harder's images of dinosaurs outside the Berlin aquarium.

Judging by Ley's discussion of the sirrush in his *The Lungfish and the Unicorn: An Excursion into Romantic Zoology* (1941, pp. 115–27), it seems reasonable to speculate that another Berlin museum also played some role in his intellectual development. The Pergamon is just a mile away from the Natural History Museum, and it is likely that he would have seen the reconstructed Ishtar Gate when it opened to the public in 1930.[14] Certainly he had been impressed by the appearance of the sirrush, and he gave it its own entry within a section suggestively titled "Myth?" He introduces "the Dragon of the Ishtar Gate" with a thorough account of Koldewey's excavation, summarizes Koldewey's observations about the similarity between the sirrush and a dinosaur, notes the "Bel and the Dragon" connection, and makes much of Koldewey's shift between his cautious 1913 analysis and the more explicit 1918 version: an authoritative expert became more convinced of the animal's plausibility given time to reflect.

Ley ultimately draws a stunning, and quite unexpected, conclusion. He posits that a sirrush was *not* alive in Mesopotamia in 600 BCE,[15] but that its appearance in Babylonian art reflects real memories of encounters with a creature that really was alive in central Africa then—and furthermore, was still alive in Ley's time, the so-called Mokele-Mbembe, a dinosaur-like sauropod dwelling in Central Africa. In support of this creature's existence, Ley turns from Koldewey and the Ishtar Gate to contemporary eyewitness accounts from travelers (some of them speaking third-hand for nameless "natives"). Among these figures is Carl Hagenbeck, cited in connection with his 1909 claims to have heard tales of a living Brontosaurus in central Africa. Most of Ley's other sources are also German explorers, reflecting the reading material of his own childhood and young adulthood in Berlin, as well as a particular German interest in colonial exploration in the regions allegedly associated with the Mokele-Mbembe.[16]

Ley's reading of Koldewey brought the sirrush from the realm of archaeology and art history into that of popular science.[17] His interpretation of the sirrush as a Mokele-Mbembe was boosted by citation in another early foundational text of cryptozoology by the person who gave the discipline its name, Bernard Heuvelmans, *Sur la Piste des Bêtes Ignorées* (1955), translated into English as *On the Track of Unknown Animals* (1958). Heuvelmans, who held a doctorate in zoology from the Free University of Brussels, considered the field he was trained in to be unwarrantedly dismissive of the possibility of undiscovered animals and survivals thought extinct, and argued in favor of a careful but open-minded approach to the possibility of extraordinary undiscovered creatures. The Mokele-Mbembe, a living sirrush, was such an important example of the kind of nontraditional evidence cryptozoology might consider that the 1995 revised Routledge edition of *On the Track of Unknown Animals*, with a new introduction by Heuvelmans, features a full-colour photograph of an Ishtar Gate glazed brick sirrush as its only cover image.

The trajectory of interest in the living sirrush neatly parallels the overall development of cryptozoology. In his recent brief but authoritative study of fringe sciences, Michael Gordin (2021, pp. 50–52) identifies a tradition of cryptozoological quests emerging in the early twentieth century, though citing older folklore, with "waves of interest" regularly washing over the US public in the Cold War era, tracking wider cultural concerns. Discussing Sasquatch myths, Gordin (2021, p. 51) associates their recurring popularity with "wistfulness about a vanishing wilderness and compromised masculinity." The living sirrush myth suggests similar kinds of wistfulness at play, about vanishing Western colonial domination, and associated heroic exploits in archaeology and

[13] Ley was contacted by Disney first; he suggested von Braun also be featured (Newell, 2019, pp. 221–32). The episode introduces von Braun as one of the inventors of the German V2 rocket, but tactfully leaves out that these particular rockets were not headed for outer space.

[14] Ley's prodigious interests also encompassed ancient history; he wrote about ancient Mesopotamia in *Watchers of the Skies: An Informal History of Astronomy from Babylon to the Space Age* (1963). This popular work was well-reviewed in *Isis* (Hellman, 1964).

[15] In this he is seemingly inspired by Koldewey's reading of "Bel and the Dragon" as indicating that Babylonian priests were passing off a mundane reptile as a sirrush (as if the sirrush was real but no longer obtainable), as well as by Ley's own research on the aurochs, which had already disappeared from the Middle East and Mediterranean in antiquity, while surviving much longer in other regions.

[16] Edward Guimont (2019a) has persuasively argued that the readiness with which Ley made the jump from Mesopotamia to Central Africa, and had this interpretation accepted by others, is related to a long history of alternate histories of Great Zimbabwe as the Biblical Ophir, where the mines of King Solomon were located (see also Guimont, 2019b). Connections between belief in the living sirrush and the reality of the city of Ophir are evident in subsequent literature; see the dedication to "ancient voyagers to Ophir," as well as to various cryptozoology scholars who have pursued the Mokele-Mbembe in Childress (1989).

[17] Ley also discussed the sirrush in *Exotic Zoology* (1959).

adventuring.

Looking at Ley and Heuvelmans, we can observe a shift in how proponents of cryptozoology positioned themselves in relation to mainstream science. Ley may have been speculative and fanciful, but he saw himself operating in the tradition of established science and scholarship—at its vanguard perhaps, but not consciously on its fringes. This perception was shared by reviewers of his work (Glass, 1951; O.G.S.C., 1950; Zirkle, 1949) and media organizations that treated him as a respected scientific communicator. Heuvelmans, whose qualifications as a scientific expert were more traditional than Ley's, nonetheless assumed a more polemical anti-establishment position than Ley ever did. Although he sought to position the discipline as a subset of zoology, and to distinguish what he and his associates did from purveyors interested in supernatural creatures, the resistance that he met from the mainstream put him, inevitably, in opposition to establishment science (Rossi, 2016). Whatever he had set out to do, his embattled position as his work met with hostility by mainstream zoologists, established cryptozoology as an anti-establishment practice.[18] Anti-establishment credentials would be more useful in reaching an audience in the decades following the publication of *Unknown Animals*. From the 1960s onwards, cryptozoological investigation would find sympathetic listeners in a wider counterculture in pursuit of alternative explanations of science and history, and suspicious of establishment science.[19]

The sirrush's life on the fringes

Ley's and Heuvelmans's foundational texts established the sirrush as a Mokele-Mbembe; later work by Heuvelmans's followers would describe the Mokele-Mbembe as a "living dinosaur" (Mackal, 1987), and solidify its status as a longstanding member of what we might call the canon of cryptids pursued by cryptozoology enthusiasts (Fig. 7). The scholarly legitimacy of arguments for the living sirrush/Mokele-Mbembe is bolstered by invoking the authority of the ancient Babylonians (and, by extension, biblical texts about their "dragon"), and simultaneously of the excavator-expert Robert Koldewey. Today, mediated through Ley and Heuvelmans, Koldewey's analysis of the sirrush appears, with or without citation, in handbooks of cryptozoology and across cryptid-hunting blogs and media (e.g., Coleman, 2003; Eberhart, 2002; Shuker, 1996). Since the late 1990s, Koldewey's account of the sirrush, and Ley's association of it with the Mokele-Mbembe, have become very popular in Young Earth Creationism,[20] a fringe movement originating in Christian fundamentalist circles which argues for an interpretation of the earth as between six and ten thousand years old, in line with their literalist interpretation of the Bible (Fitch, 2012, pp. 98–148; National Academy of Sciences, 1999, pp. 7–8; Numbers, 2009; Scott, 1997, 2016). To make this work, dinosaurs must either be a hoax, possibly perpetrated by Satan, or must have lived alongside humans relatively recently; as such, Young Earth believers share with cryptozoologists a common interest in discovering living dinosaurs (Bielo, 2018, pp. 115–39; Gibbons & Hovind, 1999; Ham, 2000; Moore, 2014b; Prothero, 2020, pp. 145–166; Stevenson, 2012).

The search for a living dinosaur, the Mokele-Mbembe, in central Africa was a major priority for the International Society of Cryptozoologists (ISC), founded in 1982 with Heuvelmans as president and Roy Mackal, a microbiologist with a tenured position at University of Chicago, as vice president. The ISC, which also published its own journal *Cryptozoology*, was devoted to the study of "animals of unexpected form or size or unexpected occurrence in time or space" (Wilford, 1982).[21] Mackal led two ISC expeditions in Republic of Congo in the early 1980s (Mackal, 1987); more than a dozen other expeditions, many under the ISC banner, were carried out in the following decades in the Republic of Congo and Cameroon, the largest number led by the ISC-associated William Gibbons, a cryptozoologist and Young Earth Creationist (Gibbons, 2002, 2010). These expeditions may be regarded as harmlessly eccentric pursuits. Nonetheless, as Edward Guimont (2019a) points out, narratives of living dinosaurs in "darkest Africa" are inextricably intertwined with a long history of racist ideologies that served to justify colonialism and imperialism on the continent. These expeditions help to further troublingly prevalent ideas of modern Africa as a land of atavistic survivals, existing in its own premodern, even pre-human time, and still ripe for exploration (and exploitation) by "scientifically advanced" outsiders.[22]

More recently, the living sirrush concept has travelled beyond cryptozoology circles into other equally marginal theories in the writings of Joseph P. Farrell, a prolific author of books on a range of conspiracy theories with a strong presence and devoted audience on YouTube, radio, and his own website. Farrell's position within a wider "occulture" are the subject of a fascinating study by John Stroup who explains how Farrell "among other things, constructs in his popular works of alternative nonfiction a universe in which ancient biblical and mythic events possess real-world referentiality" which was "congruent with advanced science, Christian theism, and supernatural transcendence" (Stroup, 2013, p. 300). The "other things" Farrell is interested in range from Nazi flying saucers, to alien antigravity technology encoded in hermetic writings, to (more prosaically) US Vice-President Lyndon B. Johnson's involvement in President John F. Kennedy's assassination (Farrell, 2002, 2007, 2011b, 2012, 2015).[23]

Farrell's engagement with the Koldewey interpretation of the living sirrush opens his *Genes, Giants, Monsters, and Men: The Surviving Elites of the Cosmic War and Their Hidden Agenda* (2011a). In a chapter called "Koldewey's Conundrum and Delitzsch's Dilemma," Farrell recounts the standard cryptozoological talking points, more or less in line with Ley's own recapitulation of Koldewey's arguments, including the biblical "Bel and the Dragon" connection. Farrell's understanding of the sirrush derives from the tradition of cryptozoological engagement with Koldewey's observations; he quotes, "renowned naturalist Ivan T. Sanderson," a friend of Heuvelmans and another founding father of cryptozoology, who was also a scholar of paranormal phenomena in the Fortean tradition (Farrell, 2011a, p. 22, citing Sanderson, 1969).

For Farrell, however, Koldewey's observations led to a much grander conclusion than cryptozoologists had ever reached: not the relatively modest claim of a living dinosaur known to ancient peoples and perhaps still dwelling in central Africa, but rather the revelation of an entire hidden history of ancient cosmic war, where the gods and angels of human myth are real alien beings whose super-advanced technology, now in the hands of mysterious elites, continues to control our destinies. To support this claim, Farrell is in fact skeptical of Koldewey's "less than convincing" identification of the sirrush with dinosaurs. For him, the sirrush is patently *not* a likely relative of a dinosaur, or a plausible, natural living creature at all: "One would be hard-pressed to find

[18] Rossi (2016) argues that mainstream zoology could benefit from integrating aspects of cryptozoological method, as regards biodiversity conservation and the discovery of new species, but he acknowledges that the taint of pseudoscience will be difficult to shake.

[19] Gordin's instructive account of the career and reception of Immanuel Velikovsky, which serves as a means of investigating "pseudoscience wars" more generally, is relevant here, particularly his analysis of the counterculture's embrace of Velikovsky in the 1960s and 1970s (Gordin, 2013, pp. 165–185).

[20] See Anonymous (2000); Blount (2017); Ferguson (2012); Snellenberger & Snellenberger (2008, p. 124); Woetzel 2015, p. 49; 2021).

[21] This is an example of what Gordin calls a scientific counterestablishment "replicat[ing] the sociological structures of mainstream science" (Gordin, 2021, pp. 14, 42–43).

[22] On the widespread public perception of Africa as in some sense existing in the ancient past, see Scott (2004).

[23] His contribution to Nazi conspiracy theories, specifically those surrounding Rudolf Hess, have also recently been addressed by Richard J. Evans (2020, pp. 161–63).

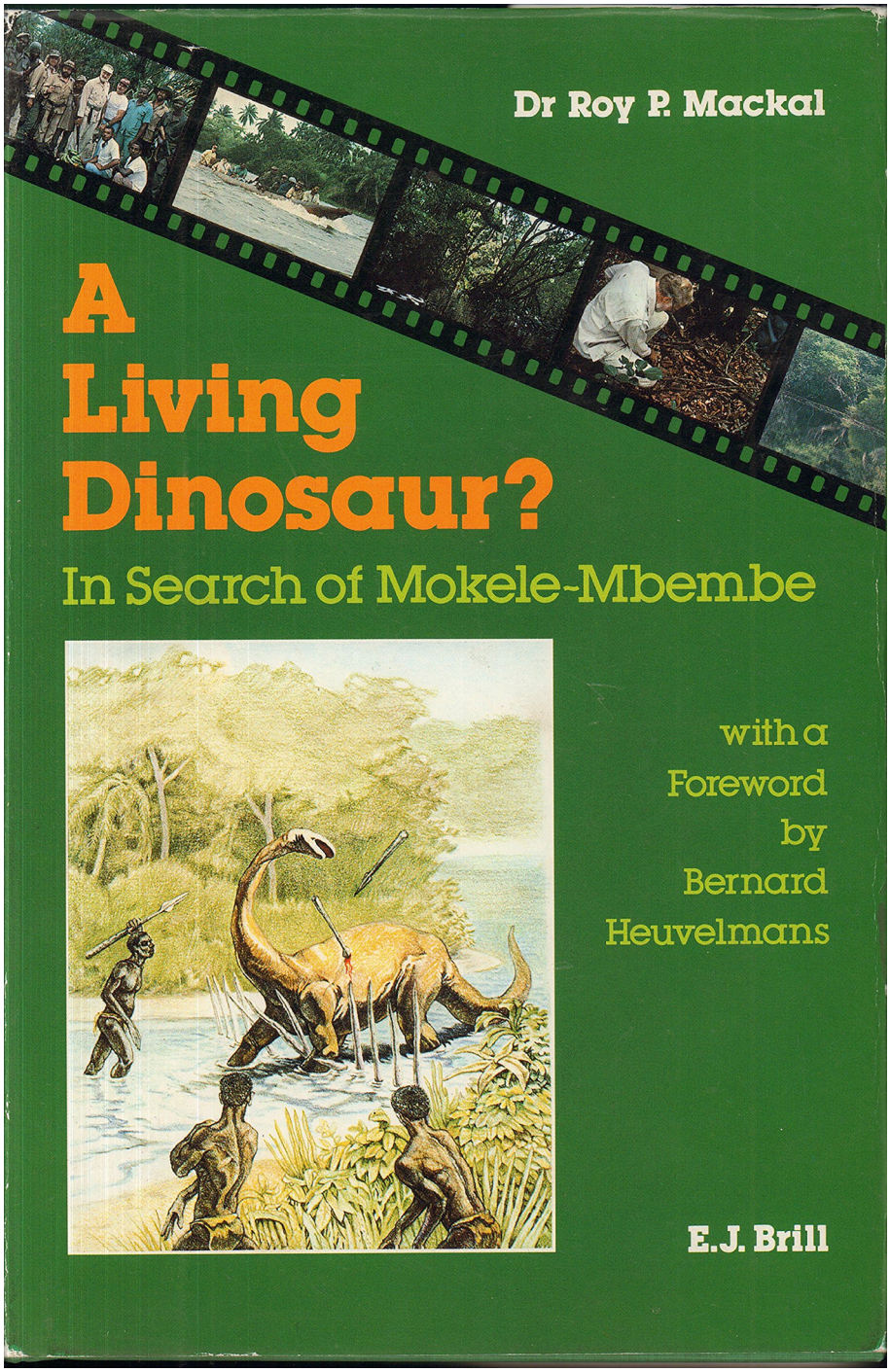

Fig 7. Cover of Roy P. Mackal's 1987 account of his expeditions in pursuit of cryptids in Africa, with speculative illustration of Mokele-Mbembe hunted by "natives." Credit: Brill.

dinosaurs with the forelegs of a cat, the hind legs of birds of prey, with spiraling tails and scorpion's quills, and snake's heads growing horns, all in one fantastic creature." Koldewey's identification of the sirrush with the iguanodon "does not really make the dilemma any more palatable, since that would mean that long after dinosaurs were supposed to be extinct according to standard evolutionary theory, the ancient Babylonians were depicting them in the clear context of other very real, and very living, creatures, the aurochs" (Farrell, 2011a, p. 11). Most mainstream scholars are in agreement with Farrell, accepting (as did Wilhelm Valentiner), the impossibility of dinosaur survival in historical Babylon.

Yet Farrell is still coming to his point: thus the sirrush can only have been created through godlike bioengineering and genetic modification technology. Farrell thus ushers the sirrush into the ancient aliens theory (a particularly grand version thereof). It is an easy fit given that literal readings of ancient Mesopotamian visual evidence underpin some of the most popular versions of the ancient aliens concept, originating with Zecharia Sitchin (see Winters, 2020).

Farrell is, as I think most scholars would likely agree, even farther on the fringes than any of the writers whose work we have looked at thus far and his conclusions would likely be judged the most outlandish.[24] Yet, just as with Heuvelmans and other ISC founders, Farrell's

[24] See, e.g., Evans (2020), p. 163, describing Farrell as "seriously off the rails."

scholarship, and his authority, derive from professional academia and its institutions. As all Farrell's promotional materials prominently proclaim, he holds an Oxford doctorate. This at least is a verifiable claim: his thesis was "Free Choice in St Maximus the Confessor," completed in 1987 within the department of theology (Farrell, 1987). From Maximus the Confessor to popular books on Nazi flying saucer crashes at Roswell, Giza Pyramid death weapons, and shadowy elites keeping ancient alien secrets, Farrell's developing academic interests have indeed been unconventional. Nonetheless, skills acquired as a conventional Oxford doctoral scholar are still evident in his analysis of Koldewey's work in at least one way: in *Genes, Gods, Monsters and Men*, the author has executed his own translation from the German.

What is "the fringe"?

How might we assess the movement of Koldewey's observations about the sirrush from his own publications to cryptozoological ones and beyond? This could be characterized as a journey from mainstream science into a domain that is widely considered a pseudoscience, and within that domain from books by scholars with non-mainstream views but mainstream credentials to unregulated speculation on wilder and wilder areas of the fringe Internet. It is certainly true that over time the areas that have taken up the "living sirrush" idea have become ever farther from mainstream academic consensus, or even popular culture, which tends to favor Bigfoot over Young Earth relics (see Buhs, 2009).

But as we trace the living sirrush idea's trajectory, we encounter the so-called "demarcation problem" (Laudan, 1983; Pigliucci & Boudry, 2013; Popper, 1957), the difficulty of drawing a bright line between legitimate science and pseudoscience, a problem which Gordin (2021, pp. 1–14) argues is unsolvable. As he explains, what deserves to be called a "pseudoscience" is, by its nature, contested and consensus will change over time as professionals negotiate the boundaries of their domains (Gordin, 2013, pp. 1–3, 7–14; see also Dawes, 2018). Mindful of the polemical yet imprecise nature of the term, I am hesitant to employ the term "pseudoscience" for the fields that have taken up the living sirrush, even as they are interesting specifically because of their position beyond the pale of mainstream academic thought (though often initiated by figures with impeccable academic credentials, like Mackal and Farrell). Given that it is not my aim here to engage with philosophical debates about the nature of pseudoscience, I want to avoid a term that is a useful category of analysis only where it is extensively interrogated, in the careful social and historical context that Gordin's work provides.

The more flexible, descriptive concept of "fringe" scientific ideas is more useful here. As Gordin (2017, 1482) explains, it is preferable because it does not require us to define a shared "core quality" of "pseudoscientificity" in diverse doctrines, but instead looks at how ideas work in practice: "Their defining characteristic is the distance from the center of the mainstream scientific consensus in whichever direction, not some essential property they share." Because Koldewey's observation and its various receptions take in science, archaeology, and history, the concept of the living sirrush has found its way onto the fringes of several disciplines. For instance, Farrell's work on the sirrush primarily works within the paradigm of history, while the ISC work within the paradigm of zoology.

The case of the sirrush demonstrates what I would argue is an important characteristic of fringe ideas: namely that they generate *increasingly* fringe ideas as receivers pose ever bolder "what ifs?"[25] In fringe media, Koldewey's observations about the sirrush-dinosaur connection are usually reiterated with surprising accuracy, probably largely thanks to the continued influence of Ley's first careful, lucid reiteration. Only what follows from this proposition changes: nothing conclusive for Koldewey; a living African dinosaur for Ley, Heuvelmans, and the ISC; a 6000-year-old planet for Young Earth Creationists; ancient aliens and the elites who keep their secrets for Farrell. The biggest difference between a marginal comment by Koldewey and a post on a website called Genesis Park ("Showcas[ing] the evidence that dinosaurs and man were created together and have co-existed throughout history") is simply context: not merely the difference between 1918 and 2021, but between one doubtful, cautiously framed interpretation in an otherwise well-respected career in the former case, and integration within a wider counterculture of highly unconventional, academically marginal beliefs in the latter.

But ideas do not only move from plausibility to implausibility over time. Let us consider Ley's work again. In both Germany and America, it is probably fair to say that Ley's enthusiasm for rocketry did much to make space travel "imaginable" and really did further the actual "conquest of space" by promoting American popular enthusiasm for the venture in ways that could only have positively impacted government support for the space program. Ley was a man who helped design the imaginary rocket technology for one of science fiction's most influential early films, then lived to see his friend von Braun put real rockets into space in launches that employed the now-famous backwards countdown that originated in the very science fiction film he had once provided special effects for (possibly even introduced to the US space program by Ley: Gunning and Loew, 2015, p. 579).[26] With a life like this, was it so absurd for Ley to imagine that fantastic stories of living dinosaurs might also turn out to manifest themselves in reality?

Conclusion

This article has traced the career of an unconventional scholarly idea, that the sirrush of Babylon's Ishtar Gate was a living relative of the dinosaurs, from a marginal comment by Robert Koldewey into progressively more unconventional intellectual spaces. Marginal, indeed, in every sense, the development of the living sirrush idea nonetheless raises questions which are central to the interpretation of the past in any context and which illustrate the difficulty of interpreting new finds and fitting them into emerging historical or scientific consensus. As scholars uncover new pieces of evidence, they suggest ways of understanding them which may be ignored or may become "canonical": Koldewey's sirrush observations got both treatments in different fields. If Koldewey's original analysis of the sirrush contained the germ of its later popularity in fringe theories, it was because of its cautiousness. Koldewey refused to draw a firm conclusion about what exactly it meant to call his Babylonian sirrush a "relative" of an iguanodon, and thereby left it open for others to draw their own. Surprising as those conclusions have been, taking in living dinosaurs, biblically literal creation, and alien bioengineering, they have emerged predictably from a process of scholarly speculation on the margins.

Conspiracy theories about ancient aliens whose intervention in our history has been preserved in ancient artefacts posits ancient forces as still active in our present world, just as do the more modest claims of a living dinosaur in central Africa. Parallels in the reception of dinosaurs and Babylon are not just an artefact of the Internet age or a feature of the fringes. I have already noted that there is an interesting concordance between the visual presence of dinosaurs in German cities and media around the time Koldewey was writing and the presence of Babylonian antiquities: in visual culture that emerged from the "Babel und Bibel" controversy, on stage in the lavish Kaiser-sponsored, Delitzsch-helmed historical pantomime *Sardanapal*, and ultimately in the construction/reconstruction of the Ishtar Gate in Berlin.

Ancient Near Eastern artefacts and dinosaur fossils have long been regarded in similar ways as equally marvelous wonders, and their careers have often run in parallel: from excavation in the ground to

[25] On the importance of asking this question, see Sitchin (1989).

[26] Ley died a few months before the moon landing, a sight that would undoubtedly have delighted him; we are of course still waiting on realizing Fritz Lang's vision of a *Frau* making the trip.

reconstruction in urban spaces and cultural institutions and promotion in popular visual culture at the same times and in the same venues. The presence of both kinds of ancient remains force humans to rethink their relationship to the deep past, and introduce the possibility that hidden artefacts (literally cryptic, occult objects) could transform our understanding of that relationship. Dinosaurs and Mesopotamian antiquities have also long provoked similar senses of unease and yet of longing: to witness the incredible sights of a former world, whether that is the towering, dazzlingly blue gate of a magnificent, once-invincible ancient *Weltstadt* now merely a fragmented, dusty ruin, or the towering, magnificently powerful creatures who preceded us as "rulers" of the earth (see Semonin, 1997) before they disappeared entirely (or did they?). Today finding an image of the Ishtar Gate on a blog about living dinosaurs feels somehow unsurprising, as it perhaps did for Koldewey to find a relative of the dinosaurs in his baked Babylonian bricks, as it did to visitors to the Berlin Zoo to see ancient Egyptian imagery, concrete dinosaurs, and living exotic animals all at once.

Koldewey's Babylon excavations were the most rigorous and scientific the area had ever seen, and I have argued that the living sirrush idea has been ignored within Near Eastern studies largely because it does not accord with the image of a modern, unimpeachably serious intellectual endeavor. Yet I want to close here by simply acknowledging that Koldewey's excavations led to perhaps the most famous invention of Mesopotamian archaeology: the Pergamon Museum's Ishtar Gate. As Bilsel (2012, pp. 178–88) argues, this act of imaginative reconstruction was within the norms of museum practice at the time. But scholarly norms have changed in this area just as they have changed in the decades since Willy Ley got good reviews in *Antiquity* for his historical-zoological reading of mythical creatures (O.G.S.C., 1950). Despite increasing academic attention to the Ishtar Gate's status as a "construction" (of early twentieth century Berlin) more than a "reconstruction" (of Babylon) (Bilsel, 2012, pp. 160–88; Brusius, 2017; Córdoba, 2003; Polaschegg, 2011, 2015), the average museum visitor is probably largely unaware of the Gate's speculative design, or the heavy reliance on modern infill over ancient artefacts, since it has been widely treated in popular media as an unproblematic, even "scientific," resurrection of ancient Babylon. Koldewey's dinosaur-related living sirrush may be a figment of the modern imagination, but so for that matter is Berlin's Ishtar Gate. That both have the status of "real" to large numbers of people illustrates the power of scholarly recreations of the past and their unpredictable interaction with their receivers.

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